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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,513	04/12/2004	Stefan Hahn	3926.080	3052

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EXAMINER

ZANELLI, MICHAEL J

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/822,513	Applicant(s) HAHN ET AL.	
	Examiner Michael J. Zanelli	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/17/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The application filed 4/12/04 has been examined. The preliminary amendment has been entered. Claims 22-43 are pending.
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
3. The IDS filed 8/17/05 has been considered.
4. The drawings are objected to because of the following:
 - A. The features shown in Figs. 1, 2, 7, 12, 14 and 15 are difficult to discern because of the contrast (i.e., black background).
 - B. None of the drawings show the structures set forth in claims 35-41 and 43.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The disclosure is objected to because of the following informalities: Delete reference to claims 1-10 [0006].
6. Claims 23, 35-41 and 43 are objected to because of the following informalities:
 - A. As per claim 23, at line 2 delete extraneous comma after “consideration”.
 - B. As per claim 35, at line 13 insert --of-- after “number”.
 - C. As per claim 43, at line 14 insert --of-- after “number”.
 - D. All claims depending from an objected base claim are objected to as incorporating the same deficiencies.
7. Claims 22-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - A. As per claim 22, “the operating parameters”, “the three-dimensional free space required for unimpeded travel” and “the detected image data” lack antecedence.
 - B. As per claim 34, the scope of the claim is indefinite because it recites both a broad limitation (“optically accentuated or highlighted”) and a narrower limitation (“for example with color”). It is unclear which limitation governs the scope of the claim.
 - C. As per claim 35, “ the required three-dimensional free space” lacks antecedence. Further, the claim is unclear as to what the “required three-dimensional free space” is in reference to. (Note language used in claim 22).
 - D. As per claim 36, “the means for specific selection” lacks antecedence.

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E. As per claim 40, “the image data having the edge boundaries of the required free space superimposed thereon”, “the movement of the positionally fixed edge boundaries” and “the model flow” lack antecedence.

F. As per claim 41, the claim is unclear whether the unit for image processing is the same unit recited in base claim 40 or an additional unit.

G. As per claim 42, “the operating parameters”, “the three-dimensional free space required for unimpeded travel” and “the detected image” lack antecedence.

H. As per claim 43, “ the required three-dimensional free space” lacks antecedence. Further, the claim is unclear as to what the “required three-dimensional free space” is in reference to. (Note language used in claim 22).

I. All claims depending from a rejected base claim are rejected as incorporating the same deficiencies.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 22-29, 31 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated EP-1065642 (hereinafter EP ‘642).

A. As per claims 22 and 42, EP ‘642 discloses a vehicle drive assist system (see for example, Fig. 2) comprising: at least one camera (10) for acquiring images of the environment surrounding a vehicle, a signal processing unit (6) for calculating three dimensional free space required for unimpeded travel based on operating parameters and

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vehicle dimensions [0253, 0259, 0261], and a display (4) for displaying the unimpeded free space travel path to the vehicle operator (see exemplary display screens represented in Figs. 4A-4C, 7, 9). The system is particularly useful in backing into a parking space [0325]. EP '642 discloses various other embodiments for different applications (see Figs. 8, 10, 19, 23, 27, 38 and 42).

B. As per claim 23, as above whereby dynamic changes over time are taken into consideration [0296].

C. As per claim 24, as above whereby an alarm is given if sufficient free space is not available [0418].

D. As per claims 25-29 and 31, as above whereby a translucent image of driver information is superimposed on the image data such that underlying image information may be viewed (Figs. 4A-4C, 7, 9, 24A, 24B).

10. Claims 22, 27, 31 and 42 are further rejected under 35 U.S.C. 102(b) as being anticipated by Iisaka et al. (6,366,221).

A. As per claims 22 and 42, Iisaka discloses a process for monitoring the free space in the direction of travel of a vehicle (Abs.). The process acquires image data surrounding a vehicle using a camera (Fig. 1:2), calculates a three dimensional free space area based on operating parameters (i.e., steering angle) and vehicle dimensions (i.e., model of vehicle) in a signal processing unit (Fig. 1:10) (Abs.), displays at least part of the image data corresponding to the required free space whereby the displayed image informs the driver as to whether the free space is sufficient for unimpeded travel (Figs.

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5A, 5B). As noted in col. 6, lines 54-57, the process may be applied to either forward or reverse traveling direction.

B. As per claim 27 and 31, as above whereby a translucent image of the vehicle is superimposed on the image data such that underlying image information may be viewed.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 35, 37, 38 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP '642 or Iisaka in view of WO 03/001471 (hereinafter WO '471). Note reference will be made to the English language equivalent US 2004/0181338 for convenience.

A. EP '642 and Iisaka are applied as above whereby both references disclose taking the dimensions of the vehicle into account in generating the travel paths. The claimed invention differs in that means are provided for at least changing the stored vehicle dimensions.

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B. WO '471 discloses a system whereby collision free operating space is determined for a vehicle as it negotiates its environment (Abstract). WO '471 not only uses vehicle dimension as a parameter to be considered, but also provides means for changing the stored dimensions (see US equiv, [0045]). One of ordinary skill in the art would have found it obvious to include such a feature in EP '642 and Iisaka because it would have allowed one to easily adapt the system for different size/model of vehicle as well as for changes in the existing vehicle (i.e., extended mirrors, trailer, etc.) (see US equiv. [0045]).

C. As per claim 37, WO '471 suggests such changes may be made via wireless transmission (see US equiv. [0045]).

D. As per claim 38, as above whereby one of ordinary skill in the art would have found it obvious to use well-known types of cameras, including wide FOV.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited documents represent the general state of the art.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Zanelli whose telephone number is (571) 272-6969.

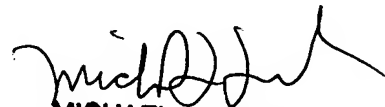
The examiner can normally be reached on Monday-Thursday 8:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/mjz


MICHAEL J. ZANELLI
PRIMARY EXAMINER